CLAIMS

1. A sensor arrangement for detecting a liquid (C) on a surface (100, 120, 160, 170), the sensor arrangement comprising:

at least one transparent elevation (12, 22, 32, 42, 52, 62, 72) formed on the surface (100, 120, 160, 170), wherein the transparent elevation (12, 22, 32, 42, 52, 62, 72) is made of a first transparent material (B), and at least one first facet (110, 111, 171, 172, 181) of the transparent elevation (12, 22, 32, 42, 52, 62, 72) is defining a first angle (α, β) with the surface (100, 120, 160, 170);

a light source (13, 23, 33, 43, 53, 63, 73) arranged for emitting an incident ray (r) into a first direction such that the incident ray (r) passes through the surface (100, 120, 160, 170) into the transparent elevation (12, 22, 32, 42, 52, 62, 72), such that in presence of a liquid at the first facet (110, 111, 171, 172) an incident ray will be transmitted through the first facet (110, 111, 171, 172), wherein in absence of a liquid the incident ray will be reflected due to a total reflection at the first facets (110, 111, 171, 172);

a light detector (14, 24, 34, 44, 54, 64, 74) for detecting the reflected incident ray (r').

2. The sensor arrangement according to claim 1 characterized in that the first angle (α, β) is larger than an angle at which a total reflection occurs at an interface of the first transparent material (B) and air (A) and smaller than an angle at which a total reflection occurs at an interface of the first transparent material (B) and the liquid (C).

3. The sensor arrangement according to claim 1 characterized in that the elevation (12, 22, 32, 42, 52, 62, 72) has a tetrahedron-shape and three first facets.

4. The sensor arrangement according to claim 1 characterized in that the elevation (12, 22, 32, 42, 52, 62, 72) is formed with a triangular or trapezoid cross-section.

5. The sensor arrangement according any preceding claim characterized in that at least one second elevation (12, 22, 32, 42, 52, 62, 72; 79) having a second facet (179) formed adjacent to a

first facet (110, 111, 171, 172) of a first elevation (12, 22, 32, 42, 52, 62, 72) wherein the second facet (179) defines a second angle with the surface (100, 120, 160, 170), wherein the second angle is larger than 75°, such that capillarity effects are enhanced.

6. The sensor arrangement according to any preceding claims characterized in that the second transparent material (B) has a refractive index of more than about 1.5 and the first angle is in the range of 42° to 60°.

7. The sensor arrangement according to any preceding claims characterized in that a diameter of the first facet is smaller than 5 mm, preferably smaller than 1 mm.

8. The sensor arrangement according to any preceding claims characterized in that an angle defined by two adjacent first facets of at least one elevation is different to 90°.

9. The sensor arrangement according to any preceding claims characterized in that first direction is substantially perpendicular to the surface (100, 120, 160, 170).

10. The sensor arrangement according to any preceding claims characterized in that the second elevations (12, 22, 32, 42, 52, 62, 72; 79) are provided with a top facet being substantially parallel to the surface (100, 120, 160, 170) or regions such that a ray emitted via a signalizing optical light source passes the elevation at the top facet.

11. The sensor arrangement according to any preceding claims characterized in that a second light detector (55) is provided for detecting a ray (t) reflected at an object placed (S) in front of the elevations (12, 22, 32, 42, 52, 62, 72).

12. The sensor arrangement according to any preceding claim characterized in that the light source (22, 32) and/or the light detector (24, 34) comprises a wave guide (26, 36, 37).